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ABSTRACT

In the summer of 1979, Cuyahoga Community College (CCC) introduced the PLATO computer-based individualized instruction system as a supplemental teaching tool in remedial English and mathematics courses. As part of a comprehensive evaluation of the system, surveys of the attitudes of students, faculty, and administrators towards PLATO were conducted to obtain information to maximize student interaction with PLATO and student improvement in basic skills. Results of the pre- and post-course survey of 92 students in three developmental education classes indicated that students preferred PLATO to having a regular teacher; that they believed PLATO should be a component of regular classes; that the individualized instruction was helpful; and that tutorial assistance should be provided at the Learning Center. Responses to a questionnaire mailed to 95 administrators, faculty, and staff stressed the utility of PLATO as a system which allows instructors to select lessons that relate to individual or group weaknesses; the need for faculty and administrators to familiarize themselves with PLATO; and the system's disadvantages in terms of costs and possible breakdowns. Recommendations for possible directions for continued use of PLATO at CCC focused on developing faculty interest in the system, motivating students, student assessment, physical expansion, and evaluation. Questionnaires and an outline of the total evaluation design are appended. (HB)

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PLATO IN THE COMMUNITY COLLEGE:
STUDENTS, FACULTY AND ADMINISTRATORS SPEAK OUT

NOTE: This presentation offers the results of a portion of a more comprehensive Phase I PLATO Evaluation. A summary of the full report is offered in the Executive Summary provided in the first 4 pages of this presentation. Context and questions posed for evaluation are also included.

Prepared for presentation at

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CUYAHOGA COMMUNITY COLLEGE

JC 810 266

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EXECUTIVE SUMMARY: PRELIMINARY RESULTS FROM PHASE I PLATO EVALUATION

(Spring Quarter, 1980)

Introduction

During the Summer of 1979 Cuyahoga Community College, with grant assistance from Control Data Corporation, introduced the PLATO computer-assisted basic skills program into its developmental education services at the Metropolitan Campus. PLATO was used during the academic year (1979-80) as a supplemental teaching tool in remedial English and mathematics courses (o91, 095, 096 level) at the Learning Center. Faculty in these courses integrated various parts of the PLATO system with basic skills curricula. The number of hours required on PLATO and various 'strands' (e.g. Language Arts) of the PLATO system do not match precisely Cuyahoga Community College's developmental education curricula at this time. The Office of Educational Evaluation and Market Research Systems conducted a preliminary PLATO Phase I evaluation during the Spring 1980 Quarter, with the cooperation and assistance of a Metropolitan Campus faculty member. The full PLATO evaluation will be implemented during the three-year Control Data Corporation-Cuyahoga Community College demonstration of PLATO.

Problem, Method, and Sample

The full PLATO evaluation design, which has been only partially implemented, attempts to measure achievement, attitude, and cost associated with students served via the PLATO system. Faculty attitudes, administrator perceptions, instructional component effectiveness, and faculty role in the implementation of the PLATO project were considered as well. During Phase I, student attitude and achievement in reading, a brief review of some areas important to integrating PLATO with other Developmental Education activities, as well as faculty and administrator perceptions of PLATO have been completed. Preliminary results are available at this time. Reading achievement was measured by administering per-post tests (New Reading Test and Nelson-Denny)to a small sample of PLATO developmental education students and to a comparison group of non-PLATO users. An attitude survey was also administered to PLATO users before and after use of the program. Faculty and administrator perceptions were measured by a survey of knowledge and attitude about PLATO. However, low returns and high student mortality rates suggest that the information in the preliminary evaluation should be utilized with extreme caution. The results of the preliminary evaluation should be treated as exploratory, raising both propositions and questions for further inquiry. The results have strong implications, however, for policy and program development related to the use of PLATO in the urban community college setting, and particularly at Cuyahoga Community College.

Principal Preliminary Evaluation Findings

1. 096-level PLATO users achieved significantly better on the Nelson-Denny vocabulary tests sequence than did non-PLATO users. Non-PLATO pretest mean was 9.00; post-test was 10.9. PLATO pretest mean was 8.47; post-test was 12.23.

2. 095-level PLATO and non-PLATO groups achieved significant gains on the "Main Idea" comprehension section of the New Reading Test, both at the .01 level. The non-PLATO groups also improved on "Reading for Facts". Both groups showed modest gains in total score on the Nelson Denny Test.

3. Preliminary examination of the PLATO reading program indicates the presence of errors related to instructional content. Many directions given during the lesson are also unclear and/or misleading. In this regard, the reading clusters were found to contain up to 50% of objectives not tested for in the pre and/or post test, up to 4 objectives not taught in the tutorials, up to 48% of tutorial pretest with content errors, and up to 60% of pretest with unclear directions. Some questions of the efficiency related to on-line testing was also suggested.

4. Ninety-one percent of the students who completed the PLATO curricular elements had positive enough opinions about PLATO to indicate that they would recommend it to others. Students "agreed" that PLATO should be made a component of regular classes, that the terminal and learning center environment were satisfactory, that the individualization (review, feedback, test, etc.) features were very helpful, and that tutorial assistance is necessary at the Center. For the most part, students indicated that the role of the regular instructor and class is important in relation to PLATO. Student attitudes about the use of PLATO as a supplemental learning tool within the regular class hours (which is how it is currently used) were, therefore, very positive. Preliminary data indicates that students are less likely, however, to use it on an assignment or voluntary basis as indicated by the difficulty encountered in having sufficient data available for analysis from students using PLATO for math and writing.

5. Respondents to the faculty/administrator/staff survey also stressed the utility of PLATO as a system from which instructors and tutors can select appropriate lessons based on group and individual weaknesses, citing the utility of the individualized appropach and the need to expand faculty and administrative familiarity with the PLATO system.

6. Respondents to the faculty and administrative survey also cited cost. the possibility of mechanical failures, and probable curricula quality as disadvantages of the PLATO system. They felt that priority should be given to student use of the basic skills curriculum and that faculty should be encouraged to use CREATE to develop and/or modify basic skill activities to that they may more closely fit course activities in CCC's basic skills program. They did not generally support use of the computer for other administrative purposes; and did not feel that expansion of the system to other campuses is appropriate at this time.

Policy and Program Implications

1. The Cuyahoga Community College - Control Data Corporation "experiment" should continue. More positive results can be expected as Cuyahoga Community College faculty become more familiar with the integration of PLATO components and the Cuyahoga Community College curriculum. However, initial results in terms of sutdent outcomes and attitudes indicate early success.

2. The Cuyahoga Community College - Control Data Corporation sponsored research

agreement should be augmented to include an element to support a project in which a Cuyahoga Community College faculty member in both English and mathematics respectively would be released to modify and match PLATO with Cuyahoga Community College curricula in Basic Skills, as well as to modify particular frames which are in need of improvement. The result would be significant because PLATO would be integrated into a regular lesson sequence of credit instruction; and special supportive and voluntary applications would be identified and catalogued for instructor utilization.

3. Special community-based basic skill upgrade projects not bound by the regular curriculum should be designed and proposed in a more concentrated and effective fashion than was achieved during the past six months. PLATO combined with assessment and tutorial assistance to remediate specific learning difficulties should be the thrust of these proposals. (Specific employment, socio-emotional, and other developmental supports that lead to new life-career skills must accompany the PLATO package if it is to prove effective over the long term with some of the target populations for whom PLATO is appropriate and perhaps fundable as part of a package of skill-building services.) Cuyahoga Community College needs technical assistance from Control Data Corporation in "marketing" the PLATO concept to locat CETA sponsors, businesses, other postsecondary institutions, community-based agencies, local school districts, and state and national policy-makers within the Departments of Education and Labor.

4. Student follow-up activities and other evaluation efforts should be intensified during the next two years of the sponsored research agreement to determine more fully the effects of PLATO and its components within the community college context.

5. Cuyahoga Community College has to date been unable to attract sufficient funding from external sources to meet the planning standard, which was to match Control Data Corporation funds with money generated from other external sources. Expanded activities aimed at acquiring such support is crucial to the success of the PLATO program.

Summary

Cuyahoga Community College continues to consider the PLATO system as a critical component of its long-term basic skills enhancement efforts. The Cuyahoga Community College experience thus far has shown promise. The College is excited about the prospects for expansion into new applications, and will continue to search for funds to support those new applications as well as the current installation. The preliminary evaluation indicates that given a preponderance of external funding, that direction is appropriate. Expansion based on internal funding, however, appears to be inadvisable until Cuyahoga Community College faculty and curricula are more closely integrated with the PLATO system and vice versa. The current direction will support such program development, faculty familiarization, and curricular integration; as well as new applications necessary to serve the large population in need of accelerated basic skills development in Greater Cleveland.

Immediate Next Steps in Evaluation

1. Student Attitude and Achievement Data Collection will continue throughout

1980-81. These data are likely to clarify and/or reinforce findings in the preliminary survey in as much as it is anticipated that a larger number of faculty and students will be using the PLATO services.

2. A follow-up of Reading students who used PLATO during the Spring 1980, Summer 1980 and Fall, 1980 for Reading improvement will be conducted through Spring, 1981.

3. Careful strand review of the writing curriculum will be implemented during the Fall Quarter. The review will examine the accuracy of the material, as well as the clarity of directions and format of presentation.

I. INTRODUCTION

PLATO, the Basic Skills learning system, was designed by Control Data Corporation. The stated goal of the computer-based individualized instruction system is to enable individuals with third grade levels of competence in reading, math and language skills to advance as far as the eighth grade level. The student participates in an interactive relationship with the PLATO system and receives immediate feedback to his/her responses. The program of study is capable of being prescribed to meet the student's particular needs. The Basic Skills program includes three content areas: reading, math, and writing. The reading curriculum contains 111 lessons or "clusters" covering five major areas or "strands". These five strands consists of making new words, understanding new words, understanding what is read, thinking about what is read and judging what is read. The 73 math clusters cover nine strands which include basic number ideas, addition, subtraction, multiplication division, fractions, decimals, ratio proportion/percent and geometry/measurement. The 59 language clusters cover five strands. These are language and usage, building and using sentences, word usage, capital letters/punctuation and writing letters. Three-fourths of the Basic Skills program is available on PLATO while the remaining one-fourth is contained in a series of workbooks. PLATO provides tutorial lessons and drill/practice sessions. The drill/practice sessions are randomly generated. PLATO provides mixed practice and application activities as well as four types of testing: diagnostic; pretest, mastery and retention.

II. CUYAHOGA COMMUNITY COLLEGE'S PLATO DEMONSTRATION PROJECT

Functional illiteracy is a growing problem in the United States.

The U.S. Office of Education has determined that 23 million American adults read at less than an eight grade level. In many urban areas, the illiteracy rate is as high as 40 percent. Competency in math is also at a low level among American adults. The Office of Education indicates that 30 million American adults cannot interpret an earnings statement well enough to find the deduction for Social Security and that 52 million American adults cannot determine the correct change from a simple cash transaction. In 1979, the Cleveland Plain Dealer reported that there were 47,000 illiterate adults in Cuyahoga County. This number represents four percent of the adult population. The faculty, staff and administrators at Cuyahoga Community College are well aware that the number of students requiring remediation in basic skills is increasing. In response to the growing need for such remediation, the Developmental Learning Center of Cuyahoga Communtiy College's Metropolitan campus has expanded its services. Approximately 20 percent of that campus' FTE 'pass through' the Developmental Learning Center each Fall quarter. Faculty are also reporting increased difficulty in assisting students in achieving course learning outcome objectives. At a symposium sponsored by the Western Campus in May 1979, Dr. John Rouche of the University of Texas reported that many students adopt the strategy of "drop out before you flunk out". Dr. Rouche's studies linked such student drop-out rates to their deficiencies in the basic skills. Cuyahoga Community College, with its policy of open admissions in an effort to encourage the enrollment of non-traditional students, recognizes the need for the place of instruction in areas of basic education within its curricula offerings. The PLATO Project represents one response to this instructional challenge.

The basic skills learning program is located in the Learning Center on its Metropolitan Campus. The Center's primary interest is in identifying

and working with incoming as well as continuing students whose success in college level work is in part dependent on assistance in reading, writing and math. The College has also developed courses taught by faculty of the Math and English departments which aim to reach the large numbers of students who need such remediation in the basic skills. The Learning Center offers student assessment, small and large group tutoring, and counseling services.

As part of the basic skills program, several Learning Center staff began to explore and to use computer assisted instruction (CAI) and computer managed instruction (CMI). The staff felt that CAI and CMI would provide individualized basic skills instruction for the diverse student population. The Office of Instructional Development and Student Assessment proposed a small, one year pilot project of the PLATO Basic Skills curriculum. The PLATO Demonstration Project is currently located on the fourth floor of the Learning Resources Center. The Developmental Learning Center is also located on the fourth floor of the Learning Resources Center.

The PLATO Demonstration Project was defined as a open-access facility. Through an appointment system, Cuyahoga Community College students could be permitted access to the PLATO Basic Skills system. Cuyahoga Community College's PLATO project began in the Fall of 1979 with two terminals. The project then expanded to ten terminals and within several months added eight more. The PLATO project now operates eighteen terminals at the PLATO Center in the Learning Resources Center. Following the first quarter of the Program's implementation, the Office of Educational Evaluation and Market Research Systems, in collaboration with the PLATO and Developmental Education staff, designed and conducted an evaluation of Cuyahoga Community College's PLATO Basic Skills Program. (Appendix A) It is the results of this evaluation that are presented in this document. The

evaluation design includes measures of both attitude and student achievement. It is intended to yield information and provide informed impressions which will be valuable for institutional as well as classroom planning. This study examined comprehensive data obtained from two sources (1) students using PLATO in order to enhance their reading skills and (2) Administrators faculty, and staff of the College (including the Western and Eastern campuses) relative to their perceptions of the PLATO system as a viable College investment in Basic Skills instruction.

III. EVALUATION DESIGN

A. Questions

The goals of the PLATO evaluation were to provide information which will help faculty, staff and administrators to use PLATO most effectively, to maximize successful student interaction with PLATO as a learning experience, and to maximize student achievement primarily in the basic skills. The evaluation set out to answer the following questions:

(1) What, if any, are the nature of the changes in the basic skills abilities of students using PLATO?

(2) What components of the Basic Skills reading curriculum provided by PLATO appear to be most needed by and most useful to students at the Community College level as represented by student usage patterns?

(3) What is the match of the PLATO curriculum vis a vis the content of existing Cuyahoga Community College basic skills remediation courses.

*** (4) What impressions might be gained of PLATO by instructional faculty relative to curriculum quality, use of student time on the system, readability and assistance needed by students?

*** (5) How do CCC faculty, staff and administrators perceive PLATO?

***(6) In what ways do students consider instructional staff most helpful as they (students) use PLATO?

***(7) What are the students' attitudes toward PLATO?

*** *This presentation describes only the survey instrumentation, procedure and results of the attitude survey conducted among students, faculty staff and administrators of the College.*

DEFINITIONS

The following definitions will be useful in examining the results of the attitude survey conducted among students, faculty and administrators.

095 students - students placed in 095 Reading Improvement by NRT* upon entering C.C.C. NRT scores range from 34-59. Nelson/Denny scores range from 60-80.

095 Reading Improvement - Developmental Education course at the Metropolitan Campus' Learning Center which focuses on basic skill development in vocabulary, comprehension, and study skills. The course prepares students for 096 Reading Improvement.

*New Reading Test is anscreening test developed by CCC faculty as a placement instrument. The test has been used for some time at the Metropolitan Campus' Learning Center.

D. Instrumentation, Sample & Methodology

1. Student Survey

The survey included the design of several questionnaires. These instruments were developed by the staff of the Office of Educational Evaluation and Market Research Systems the instructional staff of the PLATO center, and the District Coordinator of Developmental Education.

The pre/post attitude questionnaires were responded to by students who were sampled from three classes....Reading 095, Reading 095 and Reading (i.e. Writing) 091. The Reading 095 sample consisted of fifteen students from 095 morning classes which met on Mondays, Wednesdays and Fridays. These students received most of their instruction from the PLATO Basic Skills programs. Their work focused on vocabulary development and comprehension. Tutors assisted the students with learning study skills All students assigned to PLATO scored no higher than 59 on the New Reading Test Form A. All students worked with one of two tutors.

The sample of Reading 096 students consisted of 26 students. They were obtained from four Monday, Wednesday and Friday morning classes. All demonstrated a Nelson Denny vocabulary score between -6.0 and 7.9 i.e. reading grade levels no higher than seven years and nine months. All students worked with one of four tutors. These 26 students used the PLATO Basic Skills curriculum in vocabulary. There were 16 female and 10 male students in this group. The tutor-student ratio was eight to one.

The PLATO reading groups spent eight class hours on the terminals. To receive credit for the unit (vocabulary building), they had to spend eight hours in order to complete the clusters assigned.

When the tutors worked in the PLATO room, they were permitted to give assistance to the students whenever necessary. Their assistance was usually technical, content, or format related. The types of assistance provided was monitored by the tutors themselves. The PLATO curriculum provided the framework for each student's vocabulary instruction. The tutors provided only minimal assistance when called upon by the students.

Students were permitted to use the terminals in their free time. The PLATO room was open Monday thru Thursdays from 8:00 a.m. to 10:00 p.m., 8:00 a.m. to 5:00 p.m. on Fridays, and from 9:00 a.m. to 3:00 p.m. on Saturdays. The amount of extra time (beyond the eight class hours required) the students spent on the terminals was monitored (i.e. recorded) by the computer.

The Reading (i.e. Writing) 091ssample consisted of 51 students from two classes, one which met on Monday, Wednesday and Friday mornings and another which met on Tuesday and Thursday afternoons. All students were given introductory sessions on PLATO. These students had been placed in this class by their college placement tests results (i,e. the Writing sample test developed by the Learning Center faculty) or had completed the Reading 095-096 series. Students in Writing 091 usually score above the 78th percentile on the New Reading Test. All 091 students received small group instruction. The ratio of students to tutor was approximately 6 to 1.

All students in the PLATO

on the PLATO terminals. The instructors, assistants and tutors showed the students how to sign on, familiarized them with the PLATO lab, and showed them examples of the Basic Skills program. The students were

told that they could use the PLATO system in their free time to help them with their work in 091.

All 091 tutors were asked to encourage their PLATO students to make use of Basic Skills. Prior to the experiment, these tutors received a two hour inservice session on the terminals. At that session they received an overview of the Basic Skills program and other aspects of the PLATO system. Although the tutors knew about the system and could work on the system in their free time, they did not work with their students on PLATO. 091 students who used the system were aided by the PLATO assistants who work in the PLATO lab. The 091 instructor and the Basic Skills project administrator monitored the students' files, wrote personal notes to the students who were working in Basic Skills, and reported back to tutors.

At the beginning and end of the quarter , all students in the samples were administered appropriately worded pre- and post- attitude questionnaires. (See Sample Reading pre-test and Writing post-test in Appendix B and C.)

2. Administrator/Faculty/Staff Survey

Questionnaires were mailed to 95 administrators, faculty, and staff across the three campuses and the District Office. Thirty-five questionnaires, or 37 percent of the sample, were returned. Of those, 11 were from full-time faculty, 3 from part-time faculty, 11 from administrative personnel and 6 from instructional support staff (4 affiliated with the Basic Skills curriculum and two from counselors).

Table 1 shows the number of the responses in each response category and the percent each category represents of the total. The majority of the respondents (66 percent) have worked at the college level

for four years or longer. Forty-five percent have worked in the CCC Basic Skills programs for four or more years.

TABLE 1

FACULTY, STAFF, AND ADMINISTRATOR QUESTIONNAIRE RESPONDENTS
PRIMARY ROLES AND NUMBERS OF YEARS WORKED AT COLLEGE LEVEL
AND NUMBER OF YEARS INVOLVED IN CCC BASIC SKILLS

PRIMARY ROLE AT CCC					YEARS WORKED AT THE COLLEGE LEVEL					YEARS INVOLVED IN BASIC SKILLS				
FULL TIME FACULTY	PART TIME FACULTY	ADMINISTRATIVE PERSONNEL	INSTRUCTIONAL STAFF SUPPORT-NOT BASIC SKILLS	INSTRUCTIONAL STAFF SUPPORT NOT BASIC SKILLS	LESS THAN 1 YEAR	1-3 YEARS	4-6 YEARS	7-9 YEARS	10 OR MORE YEARS	1-3 YEARS	4-6 YEARS	7-9 YEARS	10 OR MORE YEARS	NOT INVOLVE IN BASIC SKILLS
N														
11	3	11	4	2	2	6	8	6	9	7	6	5	5	9
(%)					(%)					(%)				
31	9	31	11	6	6	17	23	17	26	20	17	14	14	26
N = 35 BLANK = 4					N = 35 BLANK = 4					N = 35 BLANK = 3				

IV. RESULTS

A. STUDENT ATTITUDE

The evaluation was interested in the student's motiviation for learning along with the attitude toward the grading on PLATO, operating the system, the role of instructors/tutors/and assistants, outcomes and the instructional method used by PLATO. The students were also asked about their attitudes toward individualized learning and their preferences for classroom versus computer managed instruction.

The evalution plan called for a pretest and a post test. Staff hoped to measure areas of attitude change and to compare classes as a function of using PLATO. Many more pretest were completed than were post tests however. To give the reader some idea of class responses, the attitude data from all three PLATO groups (091, 095 and 096) is tested separately for the pretest. The classes are combined and a single mean response is given for the post test. The results are also combined for the purpose of discussion.

In presenting the results the areas of interest listed above are discussed separately. Individual tables are included in order to provide the reader with more detailed information. The items included in the first group within each Table are taken from the pre-attitude questionnaire. These items were reworded as needed in the post-questionnaire (re-wording of items is not included). The second group of items, where used, represent items which fall under the category but which were appropriate only on the post-attitude test.

1. STUDENT MOTIVATION

The results of attitude toward PLATO must, of necessity, be judged in relation to student motivation to learn and to interact with the System. Table 2 provides a summary of results obtained.

TABLE 2

SUMMARY OF MEAN PRE AND POST ATTITUDE
TOWARD LEARNING USING PLATO

	Pretest			Pretest	Post-Test
	095 $\bar{X}$	096 $\bar{X}$	091 $\bar{X}$	Total $\bar{X}$	Total $\bar{X}$
It is too easy to make mistakes in (subject)	3.76	3.3	4.1	3.7	4.3
I have trouble remembering rules	3.1	3.3	3.1	3.16	3.0
I think I am smarter in (subject) than other people think	3	3.1	2.8	2.96	2.8
I like to learn new things	5	4.78	4.8	4.83	4.6
I understand why I am going to use PLATO	4.8	4.13	4.5	4.46	N/A
It is useful for me to learn how to do (subject) well	4.9	4.60	4.6	4.7	4.5
*I doubt that PLATO is going tc be much help to me in (subject)	1.6	1.8	1.9	1.76	2.5
*Noise does not bother me when I work	4	5	3.27	4.1	3.1
	N=17	23	40	80	31

*The wording on these two questions varied slightly on the pre and post tests.

By and large, PLATO students appear to be an eager group, interested in venturing to learn using PLATO. Students strongly agree with statements about liking to learn new things and about the usefulness of their course subject. They did not consider it especially easy to make mistakes in writing or reading. Students expressed a moderate level of difficulty with remembering rules for their work. They seemed to think that their perception of their capability was not much higher than that which others thought. They expected that PLATO would be helpful to them in reading or writing. This opinion was slightly, though not significantly less

positive following their use of it as a learning device. The difference was particularly evident among students using the writing curriculum.

2. Mechanics of the System

A popular criticism of computerized and other mechanical learning system relates to the difficulty or level of distraction students may experience in operating the system. Table 3 summarizes the expectations and experiences of students relative to the system as a mechanical one.

TABLE 3

SUMMARY OF STUDENT EXPECTATIONS AND EXPERIENCES RELATIVE TO THE MECHANICS OF PLATO

	Pretest			Pretest	Post-Test
	095 $\bar{X}$	096 $\bar{X}$	091 $\bar{X}$	Total $\bar{X}$	Total $\bar{X}$
Will probably be mad when PLATO does not work properly	2.8	3.2	1.5	2.5	3.1
The screen might be too small	1.7	1.9	2.2	1.9	1.9
I think I will be afraid of working with PLATO	1.4	1.7	2.1	1.7	1.6
I think I will spend more time trying to figure out how to use PLATO than learning	1.5	2.0	2.3	1.9	1.8
	N=17	23	40	80	
Typing was hard	N/A	N/A	N/A	N/A	1.9
My eyes often got tired looking at the screen	N/A	N/A	N/A	N/A	1.96
When I touched the screen, I was sure that PLATO knew what I was trying to say	N/A	N/A	N/A	N/A	3.7
PLATO is easy to operate	N/A	N/A	N/A	N/A	4.4

In general, students did not seem to anticipate a great deal of difficulty in operating the PLATO terminals. Their attitude in this regard remained unchanged following usage. They disagreed that typing

was hard on PLATO or that they had difficulty seeing what appeared on the screen. In general, they found the terminal easy to operate.

3. Role of Instructional Staff

In concert with the item above, many people feel that the role of the instructional staff is important both to easing student reluctance to interact with a mechanical system and with providing guidance and clarification during the course of the exercises. Table 4 summarizes PLATO students' expectations and experiences in this regard.

TABLE 4

SUMMARY OF STUDENT EXPECTATIONS AND EXPERIENCES RELATIVE TO ROLE OF INSTRUCTIONAL STAFF

	Pretest				Post-Test
	095 $\bar{X}$	096 $\bar{X}$	091 $\bar{X}$	Total $\bar{X}$	Total $\bar{X}$
I want my tutor to tell me my strong points and my weak points	5.0	4.6	4.8	4.8	3.9
I want my tutor to be at the PLATO Center with me	3.8	4.3	3.4	3.8	4.2
I want my tutor to tell me just what to study on the computer	4.3	3.5	4.1	3.9	3.4
I want to be the one to decide what I need to do on PLATO	3.5	2.9	3.2	3.2	3.0
The staff of the PLATO Center will help me a lot	4.8	4.5	4.5	4.6	4.4
I need someone to help me use PLATO	3.4	3.1	2.7	3.1	2.4
There was usually someone to help me use PLATO	N/A	N/A	N/A		4.8
I would have done just as well on PLATO if there was no one there to help me	N/A	N/A	N/A		4.4

The students generally agreed that instructors, tutors and assistants play an important role in their use of the PLATO system. Approximately half agreed they would need help with PLATO and wanted their tutors to be with them at the PLATO center. Indeed, the majority of the students expected that the PLATO staff would help them a lot. While they agreed they would want instructional staff to tell them what to study on the computer, they seemed somewhat less enthusiastic about this following usage. They did not seem to care whether this happened or not. That is, it did not matter whether they themselves or their instructor made that decision.

The post test group agreed that the PLATO staff did help them a great deal and that someone was usually available at the Center to give assistance when they needed it. Students disagreed that they would have done as well on PLATO without the assistance of the staff at the Center, though by the end of the period they felt less need for help in regard to operation of the terminal

4. Instructional Preference

The above question also calls to mind the question of student preference ie whether they prefer the traditional mode of group instruction or whether they would find PLATO more appropriate as a means of reaching learning objectives. Table 4 summarizes this data.

At the beginning of the quarter, the majority of students either strongly disagreed, disagreed or didn't have a strong preference for a regular teacher or PLATO. The majority of students particularly in the writing course disagreed that they'd like to be in a class doing what other students are doing. In general they agreed strongly that it would be good for instructors to make PLATO a part of class activities.

TABLE 4

SUMMARY OF STUDENT PREFERENCE FOR PLATO VS TRADITIONAL FORMS OF CLASSROOM INSTRUCTION

	Pretest			Pretest	Post-Test
	095 $\bar{X}$	096 $\bar{X}$	091 $\bar{X}$	Total $\bar{X}$	Total $\bar{X}$
I would prefer to have a regular teacher than use PLATO	2.1	2.8	3.1	2.6	2.0
I would prefer to be in a (subject) class doing	1.9	2.5	3.4	2.6	2.1
It would be good for instructors to make PLATO part of the (subject) class	4.7	4.5	4.35	4.5	4.3

The post test group gave slightly higher favorable responses to using PLATO in preference to being in class. They either disagreed or didn't care whether they had a regular teacher or to have been in a class doing what the other students were doing.

5. Instructional Method

PLATO is an individually guided education model, to one should anticipate a high level of student independence once within a lesson with maximum results. Other instructional design factors are also expected to facilitate. Student assessment of these variables is presented in Table 5.

TABLE 5

SUMMARY OF STUDENT EVALUATION OF INSTRUCTIONAL METHOD

	Pretest			Pretest	Post-Test
	095 $\bar{X}$	096 $\bar{X}$	091 $\bar{X}$	Total $\bar{X}$	Total $\bar{X}$
Method					
PLATO will let me feel like I have a teacher all my own	4.40	4.08	4.3	4.26	4.6
I think I will like PLATO because no one will know what mistakes I make	4.0	3.34	3.4	3.58	3.0
I think I will like using a workbook with PLATO	3.5	3.8	4.1		3.3
I like to know whether an answer I give is right or wrong	4.8	4.7	4.7	4.73	4.8
It was a lonesome feeling working on PLATO	N/A	N/A	N/A	N/A	2.4
I liked working at my own speed	N/A	N/A	N/A	N/A	4.7
Soundness					
The directions PLATO gives will be easy to follow	4.7	4.5	4.5	4.5	4.7
I think that PLATO will give me help when I need it	4.9	4.6	4.5	4.6	4.4
I like to have different things to do in a lesson	4.7	4.2	4.4	4.4	4.5
I like to learn using pictures and drawings rather than just words	3.35	3.47	3.7	3.5	4.6
I would want PLATO to go over past lessons before I went on to new ones	3.76	4.04	4.2	4.0	4.1
The lessons on PLATO were long	N/A	N/A	N/A	N/A	3.0
The things I did on PLATO were interesting	N/A	N/A	N/A	N/A	4.6
Easy work mostly came before hard work on PLATO	N/A	N/A	N/A	N/A	4.6
I liked how PLATO taught by doing the same thing over and over	N/A	N/A	N/A	N/A	3.9

As indicated by these results students looked forward to the privacy and exclusive attention available to them via PLATO. They anticipated no difficulty with following directions and expected to receive help from the system as needed. Their experiences following usage was much the same as their expectations. The privacy they expected relative to others' knowledge of their errors was somewhat changed in a lowered direction. They felt less lonesome working with the "machine" than one might anticipate.

The greatest change was shown in their feeling toward using a workbook. On the pretest they were generally neutral about use of the workbooks. Post responses were even less positive as that expressed on the pre-test. They were also neutral on the pre-test relative to use of pictures and drawings rather than just words as a way of learning but all groups were significantly more positive toward this method following their interaction with PLATO.

6. Testing and Grading

The PLATO curriculum included a variety of testing procedures and purposes - diagnostic, pre-test, mastery, and retention. Many students requiring remedial work also dislike taking tests. Traditional classroom format also permits the performance of peers to function as an important classroom variable. Items in Table 6 were selected as partial criteria against which to judge student performance on tests and other assessment used by PLATO.

As a group, students on the pre test generally held a neutral attitude toward taking tests. This did not change following the PLATO experience. The ability of the material on PLATO to help them prepare for tests on the system was responded to positively and in line with their wish that class work would facilitate their

test taking. There was moderate agreement that test question on PLATO were easy. While neutral in their desire to know how other students perform prior to working with PLATO they were even less interested in the performance of their fellow classmates once they had used PLATO.

TABLE 6

SUMMARY OF STUDENT ATTITUDE TOWARD TESTING

	Pretest				Post Test
	095 $\bar{X}$	096 $\bar{X}$	091 $\bar{X}$	Total $\bar{X}$	Total $\bar{X}$
I hate to take tests	3.4	3.3	3.0	3.2	3.4
I like class work to get me ready to take tests	3.7	4.2	4.6	4.2	N/A
I would like to know how other students do on their test	3.1	3.1	3.4	3.2	2.4
The tests I took on PLATO were on things it covered in the lesson	N/A	N/A	N/A	N/A	4.5
The test questions were easy	N/A	N/A	N/A	N/A	4.1

7. Center Administration

Several variables external to the PLATO instructional system are also important to its success at the College. Among these are the physical environment of the Center and the logistical factors related student usage. At this stage of system implementation, several questions remain relative to appropriate times, staffing level, staff role etc. Tables 7 and 8 explore student attitude in these areas. Administrators were also asked questions concerning this area.

TABLE 7

SUMMARY OF STUDENT EXPECTATION AND EXPERIENCE
RELATIVE TO CENTER OPERATIONS

	Pretest				Post Test
	095 $\bar{X}$	096 $\bar{X}$	091 $\bar{X}$	Total $\bar{X}$	Total $\bar{X}$
I think I will be able to use PLATO whenever I want to	3.64	4.0	4.5	4.0	4.5
Lighting is good in the PLATO room	4.2	4.6	4.6	4.5	4.7
There is enough space to work in the PLATO room	2.3	1.2	4.3	2.6	4.6
The staff at the PLATO center will help me a lot	4.8	4.5	4.5	4.6	4.4
I wish I was allowed to spend more time when I went to use PLATO	N/A	N/A	N/A	N/A	3.7

Students expected Center facilities to be accessible and convenient to use. This expectation was met. In fact these students who remained and responded on the post-test had no difficulty scheduling time at the terminals. They found the lighting good and the staff helpful. While at first glance they seemed to think that space was rather restricted, this impression was not supported. It should also be recalled that they were not especially disturbed by noise while working and did not find the PLATO room to be an especially noisy place in which to work. (Also see Administrator/Faculty/Staff responses to Improving the PLATO Environment)

8. PLATO Usage

Some related and as yet undecided question related to PLATO Center administration fall under the heading of Center-Utilization (including priorities, criteria etc.) Table 8 provides a summary of

student perception of "student types" for which PLATO would be most useful.

TABLE 8

SUMMARY OF STUDENT PERCEPTION OF
STUDENT "TYPES" MOST LIKELY TO BENEFIT FROM USING PLATO

	Pretest				Post Test
	095 $\bar{X}$	096 $\bar{X}$	091 $\bar{X}$	Total $\bar{X}$	Total $\bar{X}$
It would be good for instructors to make PLATO part of the (subject) class	4.7	4.5	4.35	4.52	4.3
PLATO is good if you are older than most students	N/A	N/A	N/A	N/A	3.3
PLATO helps students who really like school	N/A	N/A	N/A	N/A	1.8
PLATO is good for students who do not want to go to class	N/A	N/A	N/A	N/A	3.3
PLATO is good for students who really want to learn	N/A	N/A	N/A	N/A	4.6
Students who use PLATO do not need to be in a (subject) class with a teacher.	N/A	N/A	N/A	N/A	2.6

On the pretest, students were asked only whether they thought that it would be good for instructors to make PLATO part of the (subject) class. They agreed strongly with this statement both then, and following their stay on PLATO. From the options offered they considered PLATO good for highly motiviated students but did not really agree that students using it did not need to attend a class with a teacher. Their views were mostly neutral toward PLATO as being good for "older" students or for those who do not want to go

to class. They were less than agreeable that PLATO helps students who really like school.

Summary of Student Attitude

Altogether the 31 students who completed the post questionnaire held positive views toward PLATO. Fifty eight percent of the group doubted that PLATO was much help in learning the subject matter as compared with 16% who strongly disagreed with the statement. They found PLATO accessible, interesting and easy to operate. They felt that PLATO was best for highly motivated students who nonetheless need a teacher who can provide them with guidance of strengths and weaknesses and who can help them decide what is useful on PLATO. Given a choice of PLATO or the instructor there was some slight preference for PLATO. They did not feel especially lonesome while using the system and were generally comfortable with PLATO's methods and strategies used for instruction. They expressed slight dislike for workbooks but they undoubtedly compared PLATO with their past knowledge of using workbooks since they did not use workbooks at all during the period. Several students added comments to their post attitude responses. Among these were:

"Have students that were having problems to use PLATO more often."

"Instruction PLATO to every teacher in college so that anybody who need special help beside tutor, because PLATO is a big help."

"Continue with this kind of learning center. The hours should be posted in a conspicuous area in each building on the campus."

"Continue using it. It is very helpful to a student."

B. FACULTY, STAFF, AND ADMINISTRATOR ATTITUDES

Since PLATO is a demonstration project and located only at the Metropolitan Campus, interpretation of evaluation data should be made with this geographical isolation in mind. Table 9 provides a summary of respondents' source of knowledge concerning PLATO as well as a breakdown of the nature of their contact with students using PLATO.

TABLE 9

CCC PERSONNEL SOURCE OF KNOWLEDGE OF PLATO AND TYPE OF CONTACT WITH STUDENTS USING PLATO

	SOURCE OF KNOWLEDGE OF PLATO SYSTEM				
	I AM A FREQUENT OR MODERATE USER	I AM AN OCCASIONAL USER	I HAVE READ ABOUT OR SEEN A DEMO.	I HAVE HEARSAY KNOWLEDGE	I HAVE NO KNOWLEDGE
N	5	6	12	5	4
(%)	14	17	34	14	11
N = 35			BLANK = 3		

	MOST FREQUENT ROLES WITH STUDENTS RE: PLATO				
	RECOMMENDED STUDENTS TO PLATO	ASSIGNED STUDENTS TO PLATO	WORKED WITH STUDENTS USING PLATO	COUNSELED WITH STUDENTS USING PLATO	MINIMAL OR NO CONTACT WITH STUDENTS USING PLATO
N	1	2	7	3	19
(%)	3	6	20	9	54
N = 35			BLANK = 3		

The majority of respondents (54 percent) have had minimal or no contact with PLATO. Most of the items under general comments reflected this picture. They ranged from the uninformed such as, "I haven't the foggiest idea of what PLATO is, or represents" to the uninterested, "I have never heard of PLATO and have no interest in, or knowledge about it." Most people in this group, however, were aware of the system but know little about it. Thirty-four percent reported they have read about PLATO or have seen a PLATO demonstration. Thirty-one percent of the respondents

have used PLATO. Ten persons reported they had either recommended or assigned PLATO to students or had worked with students who had used PLATO. Fifty-seven percent of the respondents had had feedback from no more than five students. Twenty-six percent of the respondents reported that they had no knowledge of PLATO. Since only 37 percent of the sample administrators and the faculty and staff responded to the questionnaires, these results cannot be used to describe the characteristics or the attitudes of all administrative, instructional, or support staff at Cuyahoga Community College. However, these results do provide some indication of trends in the attitude of administrators, faculty, and staff perception of PLATO at Cuyahoga Community College. In this regard, it should again be emphasized, that the majority of respondents (54 percent) have had minimal or no contact with PLATO.

Administrators, faculty, and staff responded to a series of items concerning perceptions of instructional roles, possible advantages and disadvantages of PLATO, possible changes in student behavior, which might be attributed to PLATO, establishment of priorities for PLATO and which students might use PLATO most effectively. Respondents were asked if they agreed, held a neutral view or disagreed with each item.

In addition to the low response rate, responses to many items is further affected by the number of items left blank on the questionnaire--a pattern which follows naturally from the indications previously stated that 54 percent of the sample had little or no contact with PLATO at the time they responded to the questionnaire. The number of blanks are included in the summary as valid responses. The respondents who were frequent, moderate, or occasional users of PLATO form the source of

much of the following discussion of results obtained. The results are presented by topical areas of interest in the survey.

1. Perception of Instructional Role (Tutor, Instructor, etc.) Relative To PLATO

PLATO has long been viewed by many instructional personnel as having the capability of "taking away teaching jobs." The perception becomes even more influential in light of decreased student enrollment and dwindling college resources. Several items in the questionnaire attempted to assess perception of instructional role vis a vis PLATO. Table 10 presents a summary of the results obtained in this regard.

TABLE 10

PERCEPTION OF INSTRUCTIONAL ROLE VIS A VIS PLATO

INSTRUCTIONAL ROLE	HIGHLY AGREE	AGREE	HOLD NEUTRAL VIEW	DIS-AGREE	STRONGLY DISAGREE	NO RESPONSE
To reinforce the material taught on PLATO	2	6	4	5	9	6
To provide clarification with or without supplementary work as needed by students	6	13	4	2	1	6
To guide students in identifying areas of subject matter weakness	10	9	6	2	0	5
To select and assign lessons on the PLATO system which will strengthen individual student needs	11	9	6	0	1	5
To train students in use of the terminals	3	8	10	5	1	5
To train students in using the course material available on the system	3	13	8	2	0	6
To identify course material on the system which can be used by students who prefer not to attend class	1	7	5	6	7	6

From the items presented, the primary areas selected to describe the role of instructional personnel vis a vis PLATO were in relation to guiding students in identifying areas of subject matter weakness, providing clarification with or without supplementary work as needed by students using PLATO, selecting and assigning lessons on the PLATO system which will strengthen individual student needs. Only about half the respondents agreed that training students in the use of PLATO was a role of the instructional staff. There was general disagreement that instructional staff should reinforce material taught on PLATO--a position that would generally imply the perception that PLATO is a "stand alone" system or that the system reinforces regular class work. The largest number of respondents were neutral in their view of whether instructional staff should train students to use the terminal. One respondent commented:

> PLATO should be used for Basic Skills only. Students should attend class and PLATO should be used at school. The role of the instructor is to expand upon concepts and relate ideas to each other.

2. Students for Whom PLATO is Likely to be Most Effective

Table 11 presents a summary of responses to items which sought to provide data relative to decisions concerning students for whom PLATO would be most useful.

TABLE 11

PERCEPTIONS OF STUDENTS FOR WHOM
PLATO WOULD BE MOST EFFECTIVE

	HIGHLY AGREE	AGREE	HOLD NEUTRAL VIEW	DIS-AGREE	STRONGLY DISAGREE	NO RESPONSE
Those who do not wish to attend class	0	4	4	7	9	8
Those who are older than most "traditional" college students	1	2	11	8	3	7
Those who do not particularly like school	1	5	7	7	4	8
Those who need re-orientation to "college-type studying"	0	4	12	5	3	8
Those who really want to learn	4	12	7	1	0	8
Those who are deficient in skills required for classroom activities	5	7	7	2	3	8

The respondents generally did not consider PLATO effective for students who do not wish to attend class. They view it as most useful for those who really want to learn but who are deficient in skills required for classroom activities. They generally disagree or were at most, neutral in their thinking that it would be particularly effective with students who are older than most "traditional" college students.

One respondent commented:

> I believe any system (which) encourages students not to attend class should be abandoned. System should be used for basic skills development and drill.

3. Possible Changes in Student Behavior

Like the item above, three other items on the questionnaire provided additional information concerning the impact of PLATO on

students by looking at possible changes in student behavior. In this regard, the limited time in which PLATO has been in use may have been the most influential factor. Respondents held neutral views about whether PLATO helps students remain interested in subjects for longer periods at a time, whether PLATO students feel better about themselves than other students, and whether students make more efficient use of their time spent in regular class when they use PLATO. Table 12 summarizes their responses.

TABLE 12

ADMINISTRATOR/FACULTY/STAFF PERCEPTION OF CHANGES IN PLATO STUDENT BEHAVIOR

	HIGHLY AGREE	AGREE	HOLD NEUTRAL VIEW	DIS-AGREE	STRONGLY DISAGREE	NO RESPONSE
Students remain interested in the subject for larger periods of time	0	6	12	4	2	8
Students feel better about themselves	1	2	15	4	2	8
Students make more efficient use of their time spent in the regular class	0	8	11	4	1	8

4. Possible Advantages and Disadvantages of the PLATO System

As would be expected, efficient usage of the PLATO system would be directly related to its perceived advantages and disadvantages. Items were included in the questionnaire to represent both areas. Some possible advantages and disadvantages were evaluated as follows.

TABLE 13

PERCEIVED ADVANTAGES AND DISADVANTAGES OF THE PLATO SYSTEM

	HIGHLY AGREE	AGREE	HOLD NEUTRAL VIEW	DIS-AGREE	STRONGLY DISAGREE	NO RESPONSE
Possible Advantages						
Individualization and self-pacing reduce discipline problems in the classroom	11	8	9	2	3	9
PLATO promotes student motivation	1	3	11	6	3	8
Students retain facts longer	0	2	11	4	7	8
PLATO gives instant feedback to students concerning their performance	4	13	7	0	0	8
Using PLATO makes a student feel important	0	5	12	3	4	0
Record keeping on student performance by PLATO saves instructor time and effort	1	6	10	2	4	
Possible Disadvantages						
Equipment is likely to malfunction	6	12	6	1	0	7
PLATO is expensive to use	7	7	10	0	0	8
PLATO as an instructional mode is too impersonal	5	7	6	3	1	8
The quality of instructional content available on PLATO is questionable	9	4	10	0	0	9

The respondents agreed on several advantages and disadvantages of using PLATO. Among the advantages were first the feedback available to students concerning their performance and next a reduction in discipline problems in the classroom as a result of individualization and self-pacing. There was a mostly neutral posture on whether it made students feel important, or saved instructor time in keeping

student performance records. Respondents tended to disagree that PLATO promotes student motivation or helps students retain facts longer.

In looking at the possible disadvantages of PLATO, the items most frequently agreed with were the possibility of cost, equipment malfunction and the questionable quality of the instructional content available on PLATO. One faculty commented:

> Having reviewed Basic Skills Programs on PLATO, I found several instances of glaring errors. These programs should be revised so that students will not be exposed to misinformation.

Another faculty agreed with this posture and wrote by way of example:

> . . . according to PLATO, there are only two genders . . . masculine and feminine--in English (to be Freudian about it, I suppose 'cup' is feminine). One exercise in the unit reads, 'Mary lost (he, her) book.' According to PLATO, the answer is her because Mary, the antecedent of the pronoun, is feminine. I guess if the sentence had read, 'John lost (he, her) book.' he would be the correct answer. (No mention is made of case). Frankly, I resent my students being exposed to that kind of misinformation.

The sentiment felt by a number of respondents is the summary provided by the author of the latter example when he/she wrote:

> This all sounds more negative than I feel. Perhaps computer learning can be good for some people. Certainly, many students demonstrated initial enthusiasm for the program. As the term wore on, however, they seemed less enthusiastic (admittedly, they seem less enthusiastic about almost any method of instruction as the term wears on, but most other methods we have tried have the advantage of presenting accurate information and of being cheaper). I do think, however, that instructional materials are so bad that we are not now in a position to judge what the computer might do.

Several items on the questionnaire were related directly to overall Center administration. Specifically, these questions were related to establishing priority in student and faculty/administrative use of PLATO; improving the PLATO educational environment and expanding

the usage of the system. Faculty/staff/administrator perception on items related to these broad areas are given below.

5. Establishing Priority in Student Use of PLATO

In using the space available on individual PLATO terminals as a means of supplementing instruction, it becomes necessary to establish some priority by which students should be permitted to use PLATO. The items presented in Table reflect faculty/administrator/staff perception of the nature of such priorities.

TABLE 14

FACULTY/STAFF/ADMINISTRATOR PERCEPTION OF APPROPRIATE PRIORITIES IN STUDENT USE OF PLATO

	PRIORITY				
	HIGH	MEDIUM	LOW	ABSOLUTELY NOT	NO RESPONSE
Students who volunteer to use PLATO	13	10	1	1	7
All new students assessed as falling below a minimum pre-specified grade level	6	8	3	8	8
Students who are participants in a program which includes funding for use of PLATO	8	12	2	3	7
Students referred by an instructor or tutor	11	12	2	0	7
Individual classes at the discretion of an instructor	4	12	5	4	7
Students referred by a counselor	2	12	5	6	2

In descending order of importance in establishing priority for student use, respondents roughly choose the following: a) students who are referred by an instructor or tutor and students who volunteer to use the system; b) students who are participants in a program which includes funding for use of PLATO; c) all new students assessed

at falling below a minimum pre-specified grade level and students referred by a counselor; and, lastly, d) individual classes at the discretion of an instructor. Somewhat related is the question of establishing priorities in use of the system by faculty and administrators. This group of items produced the following rankings.

TABLE 15

FACULTY/STAFF/ADMINISTRATOR PERCEPTION OF APPROPRIATE PRIORITIES FOR NON-STUDENT USE OF PLATO

	PRIORITY				
	HIGH	MEDIUM	LOW	ABSOLUTELY NOT	NO RESPONSE
Instructors who wish to develop their own content in basic skills for student use	14	8	2	1	6
Instructors who wish to develop content other than in basic skills for student use	8	12	4	1	7
Administrative personnel who wish to use the system for administrative (e.g., staff development) purposes	2	7	8	8	7
Staff who wish to use the system for such student purposes as career information, assessment, etc.	5	10	6	4	7
Faculty, administrative, or staff personnel who wish to experiment with new ways of using PLATO (i.e., ways that have not been used here or elsewhere before)	6	8	9	2	7

It was clear that priority in non-student use of the system should be given to activities which would benefit the students in developing their basic skills. Mostly, instructors who wished to use the system to develop their own material in basic skills should be given first preference, followed by those who wish to develop material in other areas. Respondents felt that experimenting with new ways to use the PLATO

system was more important than using it as a means of providing students with career-related information. Respondents viewed use of PLATO as for administrative projects as the least important. More than half of the respondents either considered it a low priority or felt that it should absolutely not be used for this purpose.

In pursuing the level of faculty desire to learn the PLATO language so that they could develop their own program, 34 percent of the respondents said they were interested in doing so at this time. Thirty-six percent were inclined but wish to wait a bit longer. A slightly larger proportion (22%) were as yet undecided whether they wished to do so. Six persons did not respond. The majority of persons interested in learning the PLATO language wished to do so during the regular workday.

6. Improving the PLATO Educational Environment

College personnel were also asked their perception of ways by which the existing environment at the PLATO Center could be improved in order to enhance student learning. Table 16 presents the answers to these questions.

TABLE 16

FACULTY/STAFF/ADMINISTRATOR PERCEPTIONS OF WAYS
• TO IMPROVE THE PLATO ENVIRONMENT

	HIGHLY AGREE	AGREE	HOLD NEUTRAL VIEW	DIS-AGREE	STRONGLY DISAGREE	NO RESPONSE
Install equipment in study carrels to ensure student privacy	4	7	11	2	0	8
Have more terminals available at one location	2	6	12	2	1	9
Increase hours of operation:						
6:30-7:30 a.m.	2	6	9	5	1	9
Lunchtime	0	12	10	0	0	10
Evenings	2	11	8	1	0	10
Saturdays	3	9	10	2	0	8
Sundays	2	8	9	4	1	8

Of the methods listed, the primary means of improving the environment at the Center was clearly to expand the hours in which PLATO is available to students, primarily by making it available during the evenings and perhaps on weekends. This choice of availability corresponds with the suggestion that PLATO should be used primarily with students who volunteer to use it. The objective here is clearly that it would be available to such students whenever they needed it and perhaps at times when it was likely to be somewhat less used by other persons. Respondents were at best neutral but generally less supportive toward the idea of installing more carrels (or) terminals at the Metropolitan Campus or of expanding the use of PLATO by locating terminals on the Eastern or Western Campuses.

In commenting on the atmosphere at the Center, one respondent wrote:

> The poor lighting, the noise in the PLATO room, and the layout of the terminals seriously affects student use and the time spent on the terminals. The PLATO system needs special screens to cover the touch panel.

7. Expanding Usage of the System

If consideration is given to ways of expanding usage of the PLATO system, there were faculty/staff and administrators who had some views on the directions of such expansion and ways in which it might be accomplished. Table 17 provides a summary of the findings in this area.

TABLE 17

FACULTY/STAFF/ADMINISTRATOR PERCEPTION OF WAYS TO EXPAND USE OF THE PLATO SYSTEM

	HIGHLY AGREE	AGREE	HOLD NEUTRAL VIEW	DIS-AGREE	STRONGLY DISAGREE	NO RESPONSE
Provide incentive for faculty to use CREATE to develop their own	5	12	7	1	1	6
Locate the PLATO service on other campuses	2	9	12	1	2	6
Transport students from other campuses to the Metropolitan Campus to use PLATO	1	0	11	9	5	6
Develop student self-assessment packages in Basic Skills for use by new students	5	12	7	2	0	6
Develop student self-assessment package in Career Exploration for use by new students	4	13	8	1	0	6
Develop "orientation to college life" program for use by new students	3	7	12	3	1	6
Expand the service to include administrative uses (e.g., staff development)	3	10	8	2	3	6

Faculty, staff and administrator responses indicated there were possibly three primary areas that should be considered in expanding the system. The direction might be to use it for other student growth areas such as providing students with an opportunity to assess their own level in basic skills areas as well as assess themselves in terms of their knowledge about different career possibilities. Recall that they also agreed that PLATO might assist students by providing them with some career information. They were largely neutral in whether a PLATO package should be available which would help students become better oriented to college life. They agreed that it would be helpful if faculty were provided with incentives to use CREATE to develop their own curriculum, and less supportive of its use for administrative purposes. The general direction was neutrality (toward disagreement) with the possibility of locating PLATO on other campuses. Opinion was toward strong disagreement with the suggestion that students from the Eastern and Western Campuses be transported to the Metropolitan Campus to use PLATO.

Summary of Faculty/Staff/Administrator Attitude

In general, faculty, administrators, and other staff held less positive views toward PLATO than students who had an opportunity to use it. They nonetheless viewed its individualization of learning positively, particularly the opportunity for students to receive immediate feedback. The role of instructional staff was viewed primarily as providing clarification. One could view their perception of PLATO primarily as one which should be used to supplement other instruction to which students could be referred individually or for

which they could volunteer. The greatest disadvantage of PLATO was seen as possible equipment malfunction, but even more important to their use of the system--the questionable quality of the basic skills instructional material available on PLATO.

RECOMMENDATIONS

While the conclusions that can be made based on the preceeding sections are limited, the report raises a number of possible directions for continued use of PLATO at Cuyahoga Community College. Some of these suggestions are presented as recommendations in this section. They are presented as suggestions in the areas of (1) Developing Faculty Interest in PLATO, (2) Motivating Students, (3) Student Assessment, (4) Physical Expansion and (5) Evaluation.

1. Developing Faculty Interest in PLATO

The PLATO system can be very useful in meeting the needs of students at Cuyahoga Community College. An important question, however, remains. What is the most effective means of motivating instructional personnel to use those aspects of the system that are most feasible?

The alledged lack of opportunity for faculty to become involved in the decision to introduce PLATO at Cuyahoga Community College cannot be recalled. By itself, it is likely that this will continue to be an issue which delimits the extent of faculty interest and use of PLATO for some time. A relatively large percentage of those who responded, however, were indeed willing to learn the programming and formating needed to develop their own basic instructional material for use by students. Still, others plan to "wait and see". This latter position should not be viewed as a negative, but a cautious one.....a position that, in the long run,

may be to the ber ıt of greater utility of the opportunity available.

While some instructional staff have taken the opportunity to be introduced to PLATO, many still know little about it. Some small number, perhaps, do not wish to know more. A great deal of planning, motivating, and encouraging has yet to be done. Generally, responses indicated that incentives for faculty to use the system would be useful. Perhaps much of the answer will be found primarily in supporting faculty in their effort to improve their own teaching. The following are considerations:

- The use of the PLATO Basic Skills Library will be limited until such time as the exact relationship between (a) Basic skills courses and the PLATO system; and (b) PLATO as a supplemental part of instruction (as compared to a replacement of current instruction) are clear. Both relationships must be discussed for clarification and acceptance to occur.
- Faculty might be encouraged to become familiar with the PLATO system primarily for the purpose of expanding their own success with teaching. Specifically, this might be accomplished by offering a single faculty member or group of faculty members the opportunity th develop mini-lessons in areas of their courses where students experience the most difficulty. The lessons might be "created" to review past class material and to pursue the same line as exercises and test material used by the instructor so that when the lesson is recommended for individual students, the instructor is clear and secure that the instruction will "fit in place" with in-class instruction. This procedure will enable faculty to provide supplemental and remedial work to individuals or groups of students within the framework of their own instructional style and preferences.

- A large proportion of administrative as well as instructional staff are under-informed about PLATO. The current PLATO newsletter "Log On" may serve to increast this knowledge. Primary focus of the newsletter might be on ways to use PLATO. It might focus on specific curriculum areas from time to time - describe content, point out strengths and weaknesses and suggest ways that it can be used by faculty. It should continue to describe PLATO-related work of individuals or groups of instructional personnel both at Cuyahoga Community College and at other institutions using PLATO.

- The present 'Introduction to PLATO' format is useful and is perhaps aimed at encouraging individuals to return to learn further about PLATO - on their own. Planned follow-ups may be developed - workshops with other PLATO users, instruction in program design (credit bearing?) etc.

- The response relative to "incentives" for faculty also raises questions related to released faculty time, reward for research and program development activities, and professional growth opportunities related to computer assisted instructed.

- Eventually, PLATO staff might assist individual faculty in matching PLATO content with the outlines of any single basic skills course as taught by individual faculty members.

3. Student Assessment

- Faculty support for use of PLATO for student self-assessment was quite positive. While it is true that the largest number of students do volunteer for basic skills assessment are enrolled on the Metropolitan campus, it is possible to expect that an even larger number do not volunteer because, though they may accept the value of assessment and placement in appropriate courses, many are embarrassed to expose their less than adequate

APPENDICES

A. PLATO Projects Evaluation Design
B. PLATO..Student Questionnaire..Form R-1 (i.e. Reading pre-test)
C. PLATO..Student Questionnaire..Form W-2 (i.e. Writing post-test)
D. PLATO Evaluation: Faculty, Staff and Administrator Questionnaire.

DISCUSSION DRAFT ONLY

APPENDIX A

PLATO (PROJECTS) EVALUATION DESIGN

PREPARED BY:

OFFICE OF EDUCATIONAL EVALUATION &
MARKET RESEARCH SYSTEMS
Janet D. Smith, Ph.D., Director
CUYAHOGA COMMUNITY COLLEGE

MARCH 31, 1980

SUMMARY OF PLATO (PROJECTS) EVALUATION DESIGN

CONSIDERATIONS WITHIN COMPONENTS OR PROJECTS

A. CRITERIA/GOAL

B. PRIMARY QUESTIONS

C. SPECIFIC AREAS OF INQUIRY

D. PREPARATION NEEDED

E. METHODOLOGY
   1. Source of Information
   2. Methodology for Data Collection
   3. Instrumentation

F. RESOURCES

G. TIMING
   1. Most Appropriate
   2. Actual

H. SEQUENCE OF ACTIVITIES/TIME-TABLE/ PRIMARY RESPONSIBILITY

I. PROJECT ADMINISTRATOR

J. PROJECT STATUS...(as of date indicated)

K. PROJECT COMPLETION DATE

L. EVALUATION COMPLETION DATE

F. OUTCOME

COMPONENTS OR PROJECTS BEING EVALUATED

A. STAFF TRAINING

B. EQUIPMENT

C. STAFF/INSTRUCTOR ROLE

D. PLATO FOR WHOM?

E. COURSEWARE: BASIC SKILLS CURRICULUM
   1. Reading
   2. Mathematics
   3. Writing

F. INTEGRATION WITH ONGOING COLLEGE CURRICULUM
   1. Faculty Attitude
   2. Developmental Education Usage
   3. Create Curriculum

G. CCC SPECIAL PROJECTS
   1. Administrative Usage : Affirmative Action
      Staff Development
   2. Program Expansion : Cleve. Publ. Schl. College Connection Pro
      College for Kids

H. FEDERALLY FUNDED PROJECTS
   1. Basic Skills Project
   2. Special Services to Disadvantaged
   3. Veteran's Upward Bound
   4. Project Talent Search

I. CONTROL DATA CORPORATION
   (This category includes data and other evaluation requests not included in information being collected in other parts of the design).

EXAMPLE follows.....

WORKING DRAFT ONLY

3/31/80 OEEMRS/CCC

.... AN EXAMPLE....

COURSEWARE - BASIC SKILLS CURRICULUM (Reading)

A. GOAL/CRITERIA: To increase student ability in reading and understanding of material in career/technical/general college curriculum.

B. PRIMARY QUESTIONS: Nature of change in reading ability using PLATO; Faculty/Tutor evaluation of content; Cost of services.

C. SPECIFIC AREAS OF INQUIRY: Grade level in reading pre vs post PLATO; reading errors of users vs non-users.

D. PPREPARATION NEEDED: Literature review; error-analysis forms; test selection for grade level change.

E. METHODOLOGY:
(1) Source of Information: Students; center-staff; faculty
(2) Methodology for Data Collection: pre-post testing; error analysis, student error tally.
(3) Instrumentation: Nelson-Denny Reading Test

F. RESOURCES/COST: Material - $; Coding - $; Cost of Tutor/staff/faculty time - $; PLATO computer connect time - $.

G. TIMING:
(1) Appropriate: Beginning Spring, 1980
(2) Actual: Spring, 1980 - ongoing - Spring, 1981

H. SEQUENCE OF ACTIVITIES/TIME-TABLE/PRIMARY RESPONSIB.: Prepare literature review of JC/PLATO/Reading; Select standardized test with (a) content areas same as PLATO reading and (b) where grade level change can be calculated; Error analysis forms; Student data sheets.

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I. PROJECT ADMINISTR: Ruth Silon

J. PROJECT STATUS:(as of date indicated: First Experimental/Control 'Trial' groups as users/non-users Winter '80; Spring '80: Writing 091, Reading 095, Math 096 vs Control Groups

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K. PROJECT COMPLETION DATE: Ongoing

L. EVALUATION COMPLETION DATE: July 1980 - ongoing quarterly - July, 1981

M. OUTCOME: Report(s) by user group(s) primarily for District planning, Developmental Education staff/tutors and CDC and Center-staff feedback/awareness.

DRAFT ONLY

3/31/80 OEEMRS/CCC

PLATO(PROJECT) EVALUATION DESIGN.....PAGE 1A

COMPONENTS or PROJECTS TO BE EVALUATED

CONSIDERATIONS	STAFF TRAINING	EQUIPMENT	STAFF / INSTRUCTOR ROLE	PLATO FOR WHOM?	COURSEWARE-:BASIC SKILLS CURR A. READING
A. CRITERIA/ GOAL	Effecient operation of Center and maximum assistance to students	Promote student learning in .areas of deficiency .new information	Maximize successful interaction Maximize student achievement	Most effective use of method/material	Increase student ability in reading and understanding material in career/tech/ general college curriculum.
B. PRIMARY QUESTIONS	To what extent do Center staff feel "in control" of (a) system and (b) student management related to PLATO What is the cost of preparing and maintaining staff over a 1 year period.	1.Ease of use 2.vs Traditional Instruct. oClassroom oIndividual	1.What is the most effective/efficient nature of staff role at the PLATO center? 2.What is the most effective/efficient nature of instructor role for students who use PLATO?	1.For which students is PLATO most appropriate 2.What criteria is most effective for identifying potential gainers from PLATO participation?	1. What, if any, is the nature of change in reading ability for students in PLATO? 3. Faculty/tutor evaluation of content 4. What is the nature and number of errors for PLATO students as compared to errors for non-PLATO users. What is the cost of providing this service to students (at an assumed level of proficiency?
C. SPECIFIC AREAS OF INQUIRY	1. Understanding machinery operation. 2. Understanding design and content of individual courses. 3. Ability to provide clear explanations/ assistance to students. 4. Training process used. 5. Strengths/Weaknesses in staff skills. COST Job descriptions salaries by function. Salaries: part-time/full-time Consultants with role description.	1.Understanding operating instructions Screen size Role of work-books Speed of reception Down-time on computer Comparison with Tutor Comparison with instructor Solitude/isolation from other students Privacy provided Independance needed Adult quality 2.Same speed/content Assistance availability Expert availability Personal qualitities COST A. Start up, software B. Continuation: Computer-time	1. Clarify concepts Mechanical assistance Training in operations Review PLATO material Reinforce PLATO materia 2. Reinforce PLATO materia Select PLATO material Expand PLATO material Identify STUDENT strength/weaknesses Test for transfer of learning Develop appropriate courseware	1. From instructional/administrative staff: "All possible groups who could benefit. Priorities within such a list. Criteria for selection. Method of selection. Method of application. Procedure for identifying for purposes of evaluation. 2. From students using PLATO Understanding of system function. Specific outcomes Identify academic/personality types most suited. Perhaps look at outcome for pre-identified personality/course/ referral method/pre-assessed cut off groups.	1.Using same content for PLATO instruction: grade level difference between users/non-user matched for placement scores on NRT or appropriate placement instrument 2. Using same content for PLATO instruction, sax difference in change scores of student matched for scores on NRT or randomly ass 3. Also note age differences between groups 4. Compare reading errors by users and non-user 5. Assess the following: oClarity of concepts presented oAccuracy of information provided oProgression/sequencing of instruction oAmount of review provided oReading level of instruction oClarity of directions 6. Analyze principles of instruction used to achieve learning Cost of tutor time, staff time, student time req to reach pre-identified outcome level
D. PREPARATION NEEDED		1/2 Prepare student O 1/2 Prepare staff/instr. O 1/2 Record forms for help needed	-Faculty questionnaire on role perception pre-post usage.	1/2Identify appropriate instructional/administrative/staff personnel for discussion 1.Prepare student questionnaire	1. Prepare literature review of JC/PLATO/Reading 2. Select standardized test with (a) content level same as PLATO Reading and (b) where grade level change can be calculated. 3. Error analysis forms. 4. Student data sheets.

	STAFF TRAINING	EQUIPMENT	STAFF/TUTOR ROLE	PLATO FOR WHOM	COURSEWARE: BASIC SKILLS CURRICULUM A. READING
L. SOURCE OF INFORMATION	Center Staff	Students Center Staff	Center Staff Development Education Instructors/Tutors	Developmental Education Leadership Curriculum Leadership PLATO Center/Admin. staff	Students Faculty Center Staff/Tuters
2. METHODOLOGY FOR DATA COLLECTION	1. Staff report re-training and competence level after one quarter. 2. Supervisor Evaluation of staff level of functioning.	Questionnaire Staff records re-type of assistance requested.	Faculty/Staff Questionnaire also Student Questionnaire	Discussion Form Review of current users across the country	Pre-post test comparison of grade levels Faculty assessment of content Staff/Tutor Tally of student Reading inquiries.
3. INSTRUMENTATION	Staff Evaluation and comment forms for use by (a) self (b) supervisor	PLATO Student Questionnaire (In-House) EEMRS	PLATO Faculty Questionnaire (In-House) EEMRS	Perhaps include in Student Questionnaire	Nelson Denny PLATO Faculty Questionnaire (in-house-EEMRS) PLATO Student Questionnaire (in-house-EEMRS) Error analysis forms (Slion) Student data sheet-summary/Slion
F. RESOURCES/COST AVAILABLE					
G. TIMING L. MOST APPROPRIATE	Spring, 1980	Spring, 1980 Summer, 1980	Spring, 1980 Summer, 1980	Spring, 1980	Fall, 1980
2. ACTUAL					
H. SEQUENCE OF ACTIVITIES/ TIME-TABLE/PRIMARY RESPONSIBILITY	Develop Self Evaluation & Training Comment Forms-May 15, 1980 Develop Supervisor Rating Forms-May 15, 1980 Distribute June 1, 1980	Develop Student Q-I(Winter80 Field Test Student Q-I(Winter Qtr. End 80) Revise Student Q-I (Spring break 80 Distribute Student Questionnaire Pre Test-I, Nelson Denny, WRAT Math Level II- Spring Quarter 1st PLATO visit.	Develop Faculty Questionnaire (Winter '80) Field Test Faculty Questionnaire (Winter '80) Revise Faculty Questionnaire (Spring Break '80)	Identify appropriate participants Schedule meeting-early spring	Complete Nelson Denny Reading } on students' 1st visit to PLATO

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3/31/80 CEEMRS/CCC

COMPONENTS OR PROJECTS TO BE EVALUATED

CONSIDERATIONS	STAFF TRAINING	EQUIPMENT	STAFF/TUTOR ROLE	PLATO FOR WHOM	COURSEWARE: BASIC SKILLS CURRICULUM A. READING
H. CONTINUED SEQUENCE OF ACTIVITIES/ TIME-TABLE/ PRIMARY RESPONSIBILITY					
I. PROJECT ADMINISTRATOR	Bill Kennedy	N/A	N/A	N/A	Bill Kennedy: Ruth Silon
J. PROJECT STATUS (AS OF DATE INDICATED..)	Equipment and Basic Skills training completed. 3/25/80	N/A	N/A	N/A	First Experimental/Control 'Trial' groups as users/ non-users-Winter '80. Spring '80: Writing 091 Reading 095 - vs Control Groups Math 096
K. PROJECT COMPLETION DATE	Ongoing???	Ongoing. Collect whenever different groups represent users and as hardware is modi	Throughout first 1-2 years of implementation and expansion	Ongoing Review using group outcome data and discussions	Ongoing
L. EVALUATION COMPLETION DATE	Phase I- July 15, 1980	July 15, 1980	Data Collection June 30, - July 15, 1980	June 1, 1980	Quarterly reports through June 1981
M. OUTCOME	Report-(with recommendations) to trainers, planners and CCC Director of staff development.	Final reports and systematic process for collecting data from different user groups with standard reporting format.	Report primarily for use by CCC Director of Faculty/ Staff Development	Statement re(a) User definition (b) Criteria for Selection (c) Limitations of Usability (May vary from time to time depending on target group of focus)	Report(s) by user groups primarily for, District planning, Development Education tutors and CCC teac... and Center Staff awareness.

COMPONENTS or PROJECTS TO BE EVALUATED

CONSIDERATIONS	COURSEWORK: BASIC SKILLS CURRICULUM cont.		INTEGRATION WITH ONGOING COLLEGE CURRICULUM	
	B. Mathematics	C. Writing	A. Faculty Attitude	B. Developmental Educational Usage
CRITERIA/ GOAL	Increase student ability in understanding mathematical concepts which serve as pre-requisite knowledge in career/ tech general college courses	Improving student ability to communicate in written form in preparation for that which is required for career/technical and general college level courses	To make the most effective use of the PLATO system to promote/enhance student learning	To provide supplemental/Remedial /refresher instruction in basic skills so as to facilitate/promote effective use of the curriculum provided by the college
PRIMARY QUESTIONS	1. What, if any, is the nature of change in mathematics skills of students using PLATO in comparison with those who have not? 2. Faculty/tutor evaluation of content 3. What components of the Mathematics curriculum provided by PLATO appears to be (a) most needed by (b) most useful to students at a Junior College level as represented by CCC student usage patterns? 4. What is the pattern of content errors experienced by users/non users in DE course 5. Cost	1. What, if any, is the nature of change in the writing ability of students who have used PLATO compared to those who have not? 2. Faculty/tutor evaluation of content? 3. What components of the Writing curriculum provided by PLATO appears to be (a) most needed by (b) most useful to students at a Junior College level as represented by CCC student usage patterns? 4. What is the nature of content errors experienced by users/non users in DE course. 5. Cost	How do CCC faculty perceive their role vis a vis PLATO? 2. In what ways do students consider faculty most helpful as they (students) use PLATO?	1. To what extent has a plan of usage been developed for the college-wide Developmental Education component? 2. What systematic procedure has been used to promote awareness interest/involve DE Faculty/Staff/tutors with the PLATO system?
SPECIFIC AREAS OF INQUIRY	1. Using same content for PLATO instruction, note grade level difference between user/non user matched for placement scores on an appropriate placement instrument 2. Note age differences between groups as well. 3. Assess the following: Clarity of concepts presented Accuracy of information provided Progression/sequencing of instruction Amount of review provided Reading level of instruction Clarity of direction 4. Analyze principles of instruction used to teach concepts:	1. Using same content for PLATO instruction, note grade level difference between users/non users matched for placement scores on an appropriate placement instrument. 2. Note age differences between groups as well. 3. Assess the following Clarity of concepts presented Accuracy of information provided Progression/sequencing of instruction Amount of review provided Reading level of instruction Clarity of directions 4. Analyze principles of instruction used to teach concepts:	1. From faculty/tutors a. Faculty background exper. b. Knowledge of and exper. with PLATO c. Interest level re PLATO d. Role participation e. Disadvantages/advantages of system--to students --faculty f. Noticable changes in students g. Suggestions for improving environment h. Suggestions for content change i. Evaluation within context areas	1. See Faculty attitude. 2. Level of DE faculty interest shown through interest in receiving training seeing content, visiting center. 3. Level of DE participation shown through request for student participation, willingness, to permit student participation. 4. Status of DE Administrative plan for PLATO 5. Number of DE students using PLATO. 6. Methodology in use for DE student participation.
PREPARATION NEEDED	5. Note pattern/usage/success within the curriculum. 6. Note relationship to course grades by comparison with non-users 1. Prepare lit. review of JC/PLATO/Math 2. Select standardized test with (a) content areas same as PLATO Math and (b) where grade level change can be calculated. 3. Identify placement tests	5. Note pattern/usage/success within the curriculum. 6. Note relationship to course grades by comparison with non-users. 1. Prepare lit. review of JC/PLATO/ Writing 2. Select standardized test with (a) content areas same as PLATO Writing and (b) Where grade level can be calculated. 3. Identify placement test	From Students: (a) Preferred ways of staff/tutor assistance 1. Prepare lit. review of JC/PLATO/Faculty attitude 2. Prepare Faculty Attitude Questionnaire	1. Record procedure for student participation on System 2. Dev. ed faculty/staff/tutor Knowledge attitude concerning PLATO 3. Identify Dev Ed students using system

COMPONENTS OR PROJECTS TO BE EVALUATED

CONSIDERATIONS	COURSEWARE: BASIC SKILLS CURRICULUM CONTINUED. B. MATHEMATICS	C. WRITING	INTEGRATION WITH ONGOING COLLEGE CURRICULUM A. FACULTY ATTITUDE	B. DEVELOPMENTAL EDUCATION USE
E. METHODOLOGY 1. SOURCE OF INFORMATION	Students Faculty Center Staff	Faculty Students Center Staff	Faculty Students	Developmental Educ. Administrative Staff Students
2. METHODOLOGY FOR DATA COLLECTION	Pre-post test comparison of grade levels Faculty assessment of content Staff/tutor tally of student Math inquiries Itemization of computer time, student time, staff time, tutor time etc/cost.	Pre-post test comparison grade levels faculty Assessment of content. Staff/tutor tally of student math inquiries, itemization of computer time, student time, staff time, tutor time... cost.		Student attendance records DE Admission Interview DE faculty involvement level.
3. INSTRUMENTATION	WRAT Math Level II (Jastak) PLATO Faculty Questionnaire (In-House) PLATO Student Questionnaire Questionnaire-Math(IH Error Analysis Forms (Goodgen?) Student Data Sheet (Goodgen?)	Writing Sample (Matro-In House) (See M.L. Conl PLATO Student Q-W (In House) Error Analysis forms (In House-Silón) Student Data Sheet (In House-Silon)	Faculty/user vs non-user Questionnaire	DE Faculty Questionnaire
F. RESOURCES/COST AVAILABLE				
G. TIMING 1. MOST APPROPRIATE	Spring, 1980 - 1st run Ongoing through June 1981	Spring, 1980 - 1st run Ongoing through June 1981	Spring, 1980 - 1st run Ongoing through June 1981	Spring, 1980 - 1st run Ongoing through June 1980
2. ACTUAL				
H. SEQUENCE OF ACTIVITIES/ TIME-TABLE/ PRIMARY RESPONSIBILITY	Complete WRAT - Level II Math on students' 1st visit to PLATO (after PLATO brief)	Distribute Faculty/Tutor Attitude Questionnaire - End Spring Quarter	Distribute Faculty/tutor attitude Questionnaire - End Spring Quarter	

PLATO (PROJECT) EVALUATION DESIGN.....PAGE 2C

COMPONENTS OR PROJECTS TO BE EVALUATED

CONSIDERATIONS	COURSEWARE: BASIC SKILLS CURRICULUM CONTINUED		INTEGRATION WITH ONGOING COLLEGE CURRICULUM	
	B. MATHEMATICS	C. WRITING	A. FACULTY ATTITUDE	B. DEVELOPMENTAL EDUCATION USAGE
H. CONTINUED SEQUENCE OF ACTIVITIES/ TIME-TABLE/ PRIMARY RESPONSIBILITY				
I. PROJECT ADMINISTRATOR	Curtis Gooden	Ruth Silon	Center staff?? or whoever names responsible for faculty training	Mitzi Perry-Miller
J. PROJECT STATUS AS (AS OF DATE INDICATED)				
K. PROJECT COMPLETION DATE				
L. EVALUATION COMPLETION DATE	Quarterly reports through June 1981	Quarterly reports through June 1980	August 1980 ongoing as more regular faculty involved awareness builds.	
M. OUTCOME	Report(s) by user groups primarily for District Planning, Developmental Education tutors, CDC feedback and Center staff awareness.	Report(s) by user groups primarily for District Planning, Developmental Education Tutor CDC feedback and Center staff awareness.	Report primarily for staff development purposes.	Report primarily for Developmental Education Planning and to V.C. Ed. Planning and Development regarding utility of PLATO system.

PLATO (PROJECT) EVALUATION DESIGN.....PAGE 3A

OBJECTIVES OR PROJECTS TO BE EVALUATED

SPECIAL CCC PROJECTS

CONSIDERATIONS	C. CREATE CURRICULUM	ADMINISTRATIVE USAGE A. AFFIRMATIVE ACTION	ADMINISTRATIVE USAGE B. STAFF DEVELOPMENT	PROGRAM EXPANSION 1. CLEVELAND PUBLIC SCHOOL COLLEGE CONNECTION
A. CRITERIA/ GOALS	To encourage CCC faculty in development of computer based subject matter (for CCC studen as well as 'elsewhere' usage)			Increase ability in basic skill areas (reading, math, writing) for Public school students at derived (10th grade, 11th grade, 12th grade) of competency.
B. PRIMARY QUESTIONS	To what extent do faculty under stand the utility of such a curriculum.			Same as for Basic Skill curriculum areas and equipment.
C. SPECIFIC AREAS OF INQUIRY	- Availability of information -level of understanding - -Kinds of inquiries -Subject matter areas showing interest -Routing of inquiries -Response to inquiring -Level of continued interest -Nature of follow-up -faculty -staff/CDC			Same as for Basic Skills Curriculum areas and equipment.
D. PREPARATION NEEDED				Same as for Basic Skills Curriculum areas and equipment.

CONSIDERATIONS	COMPONENTS OR PROJECTS TO BE EVALUATED			
		SPECIAL CCC PROJECTS		
	C. CREATE CURRICULUM	ADMINISTRATIVE USAGE A. AFFIRMATIVE ACTION	B. STAFF DEVELOPMENT	PROGRAM EXPANSION CLEVELAND PUBLIC SCHOOL COLLEGE CONNECTION
E. METHODOLOGY				
1. SOURCE OF INFORMATION.				
2. METHODOLOGY FOR DATA COLLECTION				
3. INSTRUMENTATION				
F. RESOURCES/COST *AVAILABLE				
G. TIMING				
1. MOST APPROPRIATE				Summer, 1980
2. ACTUAL				Summer, 1980
H. SEQUENCE OF ACTIVITIES/ TIME-TABLE/ PRIMARY RESPONSIBILITY				Review Project Implementation Plans Distribute questionnaire(s) and test same day a PLATO orientation.

PLATO (PROJECT) EVALUATION DESIGN.....3C

COMPONENTS OR PROJECTS TO BE EVALUATED

3/31/80 OEEHRS/CCS

CONSIDERATIONS	ADMINISTRATIVE		USAGE	SPECIAL CCC PROJECTS
	C. CREATE CURRICULUM	A. AFFIRMATIVE ACTION	B. STAFF DEVELOPMENT	PROGRAM EXPANSION 1. CLEVELAND PUBLIC SCHOOL COLLEGE CONNECTION PROGRAM
SEQUENCE OF ACTIVITIES/ TIMETABLE/ PRIMARY RESPONSIBILITIES				
I. PROJECT ADMINISTRATOR				Jan Jonas
J. PROJECT STATUS..... (AS OF DATE)				In planning stages for Summer, 1980 (3/31/80
K. PROJECT COMPLETION DATE				End of Summer, 1980
L. EVALUATION COMPLETION DATE				Early Fall, 1980
M. OUTCOME				Report by subject matter area for use in CCC College Connection Program planning and Cleveland Public School feedback.

FEDERALLY FUNDED PROJECTS

CONSIDERATIONS	2. COLLEGE FOR KIDS	BASIC SKILLS	SPECIAL SERVICES DISADV.	VETERANS UPWARD BOUND	PROJECT SEARCH	
A. CRITERIA/ GOALS		Same as for Equipment and Courseware	Same as for Equipment and Courseware	Same as for Equipment and Courseware	Same as for Equipment and Courseware	Same as for Equipment and Courseware
B. PRIMARY QUESTIONS		Same as for Equipment and Courseware	Same as for Equipment and Courseware	Same as for Equipment and Courseware	Same as for Equipment and Courseware	Same as for Equipment and Courseware
C. SPECIFIC AREAS OF INQUIRY		Same as for Equipment and Courseware	Same as for Equipment and Courseware	Same as for Equipment and Courseware	Same as for Equipment and Courseware	Same as for Equipment and Courseware
D. PREPARATION NEEDED						

CONTROL DATA CORPORATION

This category includes data and other evaluation requests not included in information being collected in other parts of the Report.

COMPONENTS OR PROJECTS TO BE EVALUATED

FEDERALLY FUNDED PROJECTS

CONSIDERATIONS	COLLEGE FOR KIDS	BASIC SKILLS	SPECIAL SERVICES TO DISADV.	VETERANS UPWARD BOUND	PROJECT SEARCH	CONTROL DATA CORPORATION This category includes data and other evaluation requests not included in information being collected in other parts of the Report.
I. METHODOLOGY 1. SOURCE OF INFORMATION						
2. METHODOLOGY FOR DATA COLLECTION						
3. INSTRUMENTATION						
F. RESOURCES/ COST AVAILABLE						
G. TIMING 1. MOST APPROPRIATE						
2. ACTUAL						
H. SEQUENCE OF ACTIVITIES/ TIME-TABLE/ PRIMARY RESPONSIBILITY						

PLATO (PROJECT) EVALUATION DESIGN.....PAGE 4C

COMPONENTS TO BE EVALUATED

3/31/80 OEEMRS/TCC

FEDERALLY FUNDED PROJECTS

CONSIDERATIONS	#2 COLLEGE FOR KIDS	BASIC SKILLS	SPECIAL SERVICES TO DISADVANTAGE	VETERANS UPWARD BOUND	PROJECT SEARCH		CONTROL DATA CORPORATION This category includes data and other evaluation requests not included in information being collected in other parts of the Report
H. CONTD. SEQUENCE OF ACTIVITIES/ TIME-TABLE/ PRIMARY RESPONSIBILITY							
I. PROJECT ADMINISTRATOR		Brian Donnely CUNO (Stanli Becker	Henrietta Bibbs ACCESS	Louis Niro ACCESS.	Henrietta Bibbs ACCESS		
J. PROJECT STATUS AS (AS OF DATE INDICATED)	3/31/80 - In Planning stages	3/21/80 Pending 80-81 Funding	3/21/80 Pending 80-81 funding	3/21/80 Pending 80-81 funding	3/21/80 Pending 80-81 funding		
K. PROJECT COMPLETION DATE							
L. EVALUATION COMPLETION DATE							

P L A T O.....STUDENT QUESTIONNAIRE - FORM R-1.....P L A T O

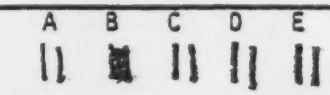
A, Please write your name on this sheet_____

B. Please fill in the spaces marked on the answer sheets with yOur ( )Name ( )ID Number
( )Campus ( )Instructo
( )Quarter( )Course No

C. Next, fill in spaces on the answer sheet (See Key Below) to tell us how closely you agree with each of the statements listed.

Fill in	A	if you agree a lot with the statement
	B	if you agree, but not a lot with the statement
	C	if you don't really care one way or another about what the statement says
	D	if you do not really agree with the statement
	E	if you disagree a lot with the statement

EXAMPLE: I enjoy reading A B C D E



I have filled in B to mean that I agree with the statement, but not a lot because I do enjoy reading, but there are many other things that I enjoy doing much more.

Now, start with #1 on this sheet and #1 on your answer sheet to tell us how you feel about the statements below.

1. It is too easy to make mistakes in reading. M
2. I hate to take tests. G
3. I have trouble remembering rules. M
4. Noise does not bother me when I work. much
5. I think I am smarter in reading than other people think. M
6. I like to learn new things. M
7. I doubt that PLATO is going to be much help to me in reading. O
8. I understand why I am going to use PLATO. M
9. It is useful for me to learn how to read - well. M
10. It would be good for instructors to make PLATO part of the reading class. I
11. I would prefer to have a regular teacher than use PLATO. ?
12. I would prefer to be in a reading class doing what other students are doing. ?

Please turn over this page.....

13. I want my tutor to tell me my strong points and my weak points. A

14. I want my tutor to be at the PLATO center with me. A

15. I want my tutor to tell me just what to study on the computer. A

16. I want to be the one to decide what I need to do on PLATO. M

17. I need someone to help me use PLATO. I.

18. I would want PLATO to go over past lessons before I go on to new ones. Method

19. PLATO will let me feel like I have a teacher that is all my own. Met

20. I think I will like PLATO because no one will know what mistakes I make. Met

21. I think I will like using a workbook with PLATO. Met

22. I think that PLATO will give me help when I need it. Meth

23. I like class work to get me ready to take tests. P

24. The directions PLATO gives will be easy for me to follow. Met

25. I like to know whether an answer I give is right or wrong. Meth

26. I like to have different things to do in a lesson. Met

27. I like to learn using pictures and drawings rather than just words. P

28. I will probably be mad when PLATO doesn't work properly. Mech

29. I think I will spend more time trying to figure out how to use PLATO than learning. O

30. I think I will be afraid of working with PLATO. Mot

31. The screen might be too small. mech.

32. I would like to know how other students using PLATO do on their test. G

33. I think I will be able to use PLATO whenever I want to. mech.

34. Lighting is good in the PLATO room. Mc

35. There is enough space to work in the PLATO room. Mc

36. The staff at the PLATO center will help me a lot. Acat.

37. Tell us how long you think it will take during a lesson before you will be tired using PLATO. Follow the directions below:

Fill in		
	A	if you think you will be tired after 5 minutes
	B	if you think you will be tired after 15 minutes
	C	if you think you will be tired after 30 minutes
	D	if you think you will be tired after 60 minutes
	E.	if you think you will be tired after more than one hour.

WE HOPE YOU ENJOY USING PLATO. BE SURE TO TELL US THE KIND OF HELP YOU NEED. THANK YOU.

PLATO. . . . . .STUDENT QUESTIONNAIRE. . . .FORM W - 2. .PLATO

A. Please write your name on this sheet _____

B. Please fill in the spaces marked on the answer sheets with your ( ) Name ( ) ID Number
( ) Campus ( ) Instructor
( ) Quarter ( ) Course No.

C. Next, fill in spaces on the answer sheet (See-Key Below) to tell us how closely you agree with each of the statements listed .

Fill in: A if you agree a lot with the statement
B if you agree, but not a lot with the statement
C if you don't really care one way or another about what the statement says
D if you do not really agree with the statement
E if you disagree a lot with the statement

EXAMPLE: I enjoy writing A B C D E

I have filled in "B" to mean that I agree with the statement, but not a lot because I do enjoy writing, but there are many other things that I enjoy doing much more.

WE HOPE PLATO WAS HELPFUL TO YOU. WE PLAN TO USE YOUR ANSWERS TO THE QUESTIONS BELOW TO HELP US UNDERSTAND HOW TO MAKE IT MORE USEFUL TO STUDENTS.

Now, start with #1 on this sheet and #1 on your answer sheet to tell us how you feel about the statements below.

1. I find it easy to make mistakes in writing.
2. I hate to take tests.
3. I have trouble remembering rules.
4. Noise does not bother me when I work.
5. I think I am smarter in writing than other people think.
6. I like to learn new things.
7. I doubt that having used PLATO is going to be much help to me in writing.
8. I understood why I was using PLATO.
9. It is useful for me to learn how to write well.
10. It would be good for instructors to make PLATO part of the writing class.
11. I would have preferred to have a regular teacher than use PLATO.
12. I would have preferred to be in a writing class doing what other students were doing.
13. Students who use PLATO do not need to be in a writing class with a teacher.

14. My tutor told me my strong points and my weak points.

15. My tutor was usually at the PLATO center with me.

16. My tutor usually told me just what to study on the computer.

17. I was the one to decide what I needed to do on PLATO.

18. There was usually someone to help me use PLATO.

19. I would have done just as well on PLATO if there was no one there to help me.

20. PLATO went over past lessons before I went on to new ones.

21. PLATO let me feel like I had a teacher that was all my own.

22. I liked PLATO because no one knew what mistakes I made.

23. It was a lonesome feeling working on PLATO.

24. I liked working at my own speed.

25. I liked using a workbook with PLATO.

26. PLATO gave me help when I needed it.

27. The lessons on PLATO were long.

28. The directions PLATO gave were easy for me to follow.

29. I like how PLATO told me whether an answer I gave was right or wrong.

30. There were different things to do in a lesson.

31. The things I did on PLATO were interesting.

32. I liked how PLATO used pictures and drawings rather than just words.
33. I liked how PLATO taught by doing the same thing over and over.

34. Easy work mostly came before harder work on PLATO .

35. The tests I took on PLATO were on things it covered in the lesson.

36. The test questions were easy.

37. I usually knew how other students using PLATO were doing.

38. I was mad when PLATO didn't work properly.

39. I spent more time trying to figure out how to use PLATO than learning.

40. I am still afraid of working with PLATO.

41. The screen was too small.

42. Typing was hard.

43. My eyes often got tired looking at the screen.

44. When I touched the screen, I was sure that PLATO knew what I was trying to say.

45. PLATO is easy to operate.

46. I would like to know how other students using PLATO did on their test,

47. I was able to use PLATO whenever I wanted to.

48. Lighting was good in the PLATO room.

49. There was enough space to work in the PLATO room.

50. The staff at the PLATO center helped me a lot.

51. I wish I was allowed to spend more time when I went to use PLATO.

52. Even though the class is over, I would like to continue using PLATO.

53. I would recommend PLATO to other students.

54. PLATO is good if you are older than most students.

55. PLATO helps students who do not really like school.

56. PLATO is good for students who do not want to go to class.

57. PLATO is good for students who really want to learn.

58. Tell us how long you think it took during a PLATO lesson, I became tired after:

Fill in:
- A if you think you were tired after 5 minutes
- B if you think you were tired after 15 minutes
- C if you think you were tired after 30 minutes
- D if you think you were tired after 60 minutes
- E if you think you were tired after more than one hour

Please complete the following statement. When I think of PLATO, I think that the College should have students that are having problems to use Plato more often.

Thank you for taking the time to help us by answering these questions.

Cuyahoga Community College, pursuant to the requirements of Titles IV, VI and VII of the Civil Rights Act of 1964 and Title IX of the Education Amendment of 1972, does not discriminate against applicants, employees or students on the basis of race, color, religion, sex, national origin or handicap in its employment policies and/or educational programs or activities, including admission to such. Inquiries concerning this policy should be directed to: Coordinator of Affirmative Action, 700 Carnegie Ave., Cleveland, Ohio 44115. Phone (216) 241-5966.

PLATO Evaluation

Faculty, Staff & Administrator Questionnaire

Cuyahoga Community College

APPENDIX D

Eastern Campus
Metropolitan Campus
Western Campus

conducted by
Educational Evaluation & Market Research Systems
in collaboration with
Office of Instructional Development & Student Assessment
District Administrative Services

May 19, 1980

Dear Colleague,

Please take a few minutes to answer the questions on the following pages. Your answers will help us know more about how effective the college has been in selecting, and making available, the PLATO system as a means of improving services to its students.

Your thoughtful and immediate response will be greatly appreciated. Professional discretion in use of the data is assured.

Please call if there are any questions.

Yours truly,

Janet D. Smith, Ph.D., Director
Educational Evaluation & Market Research Systems

Bill Kennedy

William Kennedy, Ph.D., Director
Office of Instructional Development & Student Assessment

*** *** INSTRUCTIONS *** ***

PLEASE USE THE IBM ANSWER SHEET PROVIDED. FIRST, PLACE ANY ID NUMBER IN THE SPACE PROVIDED FOR ID NUMBER.

IN ANSWERING ITEMS 1-9, PLEASE FILL IN THE SPACE ON THE ANSWER SHEET WHICH IDENTIFIES YOUR SELECTION FROM THE CHOICES GIVEN.

SEPARATE CODING FORMULAE ARE PROVIDED SO THAT YOU CAN ANSWER ITEMS 10-49 AND 50-60.

PLEASE START WITH #1 ON THE ANSWER SHEET AND #1 ON PAGE 2.

54. Individual classes at the discretion of an instructor

55. Students referred by a counselor

#8+9

J. ESTABLISHING PRIORITY IN FACULTY/STAFF/ADMINISTRATIVE USE OF PLATO

56. Instructors who wish to develop their own content in basic skills for student use.

57. Instructors who wish to develop content other than in basic skills for student use.

58. Administrative personnel who wish to use the system for administrative (e.g. staff development) purposes.

59. Staff who wish to use the system for such student purposes as career information, assessment etc.

60. Faculty, administrative, or staff personnel who wish to experiment with new ways of using PLATO (ie. ways that have not been used here or elsewhere before).

IN CASE WE HAVE NOT COVERED ALL THE AREAS ON WHICH YOU WOULD LIKE TO COMMENT, WE ARE INTERESTED IN YOUR OPINION AND REACTION TO THE PLATO SYSTEM AT CUYAHOGA COMMUNITY COLLEGE. PLEASE USE THE SPACE BELOW TO SHARE ANY ADDITIONAL THOUGHTS YOU HAVE WITH US:

_____

_____

_____

_____

_____

_____

_____

_____

_____

Please check your primary role at the College:

( )Full-time faculty
( )Part-time faculty
( )Administrative personnel
( )Instructional staff support personnel (Basic Skills related)
( )Instructional staff support personnel (not Basic Skills related)

Thank you for taking the time to respond. *Please return the completed answer sheet and Questionnaire to:*

Janet D. Smith
Educational Evaluation & Market Research
District Office

37. Have more terminals available at one location.

Increase available usage hours to include:

38. 6:30 - 7:30 a.m.

39. Lunch time.

40. Evenings

41. Saturdays

42. Sundays

H. EXPANDED USAGE OF THE SYSTEM

43. Provide incentives for faculty to use the CREATE curriculum to develop their own course material for student use.

44. Locate the PLATO service on other Campuses.

45. Transport students from other campuses to the Metropolitan Campus to use PLATO

46. Develop student self-assessment packagesin Basic Skills for use by new students.

47. Develop student self-assessment package in Career Exploration for use by new students.

48. Develop "orientation to college-life" program for use by new students.

49. Expand the service to include administrative uses (e.g. staff development).

PLEASE RATE EACH OF THE FOLLOWING ITEMS (#50 - 60) ON THE PRIORITY YOU FEEL IT SHOULD RECEIVE IN DECIDING ON THE MOST EFFICIENT & EFFECTIVE USE OF THE PLATO SYSTEM.

FILL IN..... A IF THE ITEM SHOULD HAVE A HIGH PRIORITY
B IF THE ITEM SHOULD HAVE A MEDIUM PRIORITY
C IF THE ITEM SHOULD HAVE A LOW PRIORITY
D IF YOU FEEL THAT PLATO SHOULD ABSOLUTELY NOT BE USED IN THE MANNER DESCRIBED IN THE ITEM

I. ESTABLISHING PRIORITY IN STUDENT USE OF PLATO

50. Students who volunteer to use PLATO

51. All new students assessed as falling below a minimum pre-specified grade level.

52. Students who are participants in a program which includes funding for use of PLATO.

53. Students referred by an instructor or tutor.

A. A. CONTEXT

1. What is your primary role at the college?

a. Full-time faculty
b. Part-time faculty
c. Administrative personnel
d. Instructional staff support personnel - Basic Skills related
e. Instructional staff support personnel - not Basic Skills related.

2. How long have you been working at the community college level?

a. Less than 1 year
b. 1-3 years
c. 4-6 years
d. 7-9 years
e. 10 or more years.

3. How long have you been involved with Basic Skills at CCC?

a. 1-3 years
b. 4-6 years
c. 7-9 years
d. 10 or more years.
e. I am not involved with Basic Skills at CCC.

4. What is your teaching area within the basic skills?

a. Reading
b. Writing
c. Mathematics
d. Speech
e. Question not applicable.

5. Which of the following roles have you most frequently had with students relative to PLATO?

a. I have recommended students to PLATO
b. I have assigned students to use PLATO
c. I have worked with students using PLATO
d. I have counseled with students using PLATO
e. I have had minimal to no contact with students using PLATO.

6. From approximately, how many students have you had some kind of feedback concerning PLATO?

a. 0-5
b. 6-10
c. 11-15
d. 16-20
e. 21 or more. Approximately how many?_____

7. Please select the category which best describes the source of your knowledge of the PLATO System?

   a. I am a frequent to moderate user of PLATO
   b. I am an occasional user of PLATO
   c. I have only informed (from reading and/or demonstration) knowledge of PLATO
   d. I have only hearsay knowledge of PLATO from students and/or colleagues.
   e. I have virtually no knowledge of PLATO

8. Would you like to learn how to develop your own programs for use on PLATO?

   a. Yes
   b. No
   c. Undecided
   d. I prefer to wait a while longer before I try it.
   e. No response.

9. If you answered yes to #8, please indicate which of the following time periods would be most suitable to you

   a. Early mornings (7 - 8 a.m.)
   b. Weekday evenings
   c. Weekday - days
   d. Weekends
   e. No response

FOR EACH OF THE FOLLOWING QUESTIONS RELATED TO THE CAPITALIZED CAPTION WHICH PRECEDES IT, PLEASE FILL IN THE SPACE ON THE ANSWER SHEET (SEE KEY BELOW) TO TELL US HOW CLOSELY YOU AGREE OR DISAGREE WITH EACH STATEMENT.

FILL IN..... A IF YOU STRONGLY AGREE WITH THE STATEMENT
B IF YOU AGREE WITH THE STATEMENT
C IF YOU HOLD A NEUTRAL VIEW CONCERNING THE STATEMENT
D IF YOU DISAGREE WITH THE STATEMENT
E IF YOU STRONGLY DISAGREE WITH THE STATEMENT

B. PERCEPTION OF INSTRUCTIONAL ROLE (TUTOR, INSTRUCTOR ETC.) RELATIVE TO PLATO.

10. To reinforce the material taught on PLATO

11. To provide clarification with or without supplementary work as needed by students.

12. To guide students in identifying areas of subject matter weakness.

13. To select and assign lessons on the PLATO system which will strengthen individual student needs.

14. To train students in the use of terminals.

15. To train students in using the course material available on the system.

16. To identify course material on the system which can be used by students who prefer not to attend class.

C. STUDENTS FOR WHOM PLATO IS LIKELY TO BE MOST EFFECTIVE

17. Those who do not wish to attend class.

18. Those who are older than most "traditional" college students.

19. Those who do not particularly like school.

20. Those who need a re-orientation to "college-type studying."

21. Those who really want to learn.

22. Those who are deficient in skills required for classroom activities.

D. POSSIBLE ADVANTAGES OF THE PLATO SYSTEM

23. Individualization and self-pacing reduce discipline problems in the classroom.

24. PLATO promotes student motivation

25. Students retain facts longer.

26. PLATO gives instant feedback to students concerning their performance.

27. Using PLATO makes a student feel important.

28. Record keeping on student performance by PLATO saves instructor time and effort.

E. POSSIBLE DISADVANTAGES OF THE PLATO SYSTEM

29. Equipment is likely to malfunction.

30 PLATO is expensive to use.

31. PLATO as an instructional mode is too impersonal

32. The quality of instructional content available on PLATO is questionable.

F. POSSIBLE CHANGES IN STUDENT BEHAVIOR

33. Students remain interested in the subject for longer periods at a time.

34. Sutdents feel better about themselves.

35. Students make more efficient use of their time spent in the regular class.

G. IMPROVING THE PLATO EDUCATIONAL ENVIRONMENT

36. Install equipment in study carrels to ensure student privacy

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96 Powell Library Building
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